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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,965	12/09/2003	Hsin-Ho Wu	NSC1P287/P05765	6419

22434 7590 04/23/2007  
BEYER WEAVER LLP  
P.O. BOX 70250  
OAKLAND, CA 94612-0250

EXAMINER
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FLORES RUIZ, DELMA R

ART UNIT	PAPER NUMBER
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2828

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/23/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/731,965

Applicant(s)

WU ET AL.

Examiner

Delma R. Flores Ruiz

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19,22-26,28,29 and 32-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-19 and 34 is/are allowed.
- 6) ☒ Claim(s) 1-4,22-26,28,29,32-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                 | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 – 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ciano (2002/0196595).

***Regarding claim 1***, Ciano discloses a method of controlling optical power for a laser, the method comprising: determining a base power level for laser using data models that characterize laser performance for the laser, the model being generated from laser performance data obtained from measurements of laser properties taken from the of laser (It is disclose in Paragraph [0030, Lines 7 – 12] determined a base power level for laser using a data model); determining a relationship between

modulation current ( $I_{\text{mod}}$ ) and temperature using the data model of laser performance (Paragraphs [0030]); providing a specific laser device that is introduced in a fiber optic (Paragraph [0028]); determining a relationship between target average power (Paragraph [0030, Lines 7 – 12]) and temperature (Paragraph [0027 and 0030]) for a specific laser device over a range of temperatures using the base power level (Paragraph [0030, Lines 7 – 12]); and adjusting laser performance based on the temperature, target average power and modulation current ( $I_{\text{mod}}$ ) (Paragraph [0030, Lines 7 – 12]).

Ciancio does not modified discloses the claimed invention except for group of laser. It would have been obvious to one of ordinary skill in the art at the time the invention was made to group of laser since it was known in the art taking two or more same model of laser and take one of these types of model and use to the data models.

**Regarding claim 2**, Ciancio discloses the relationship between modulation current ( $I_{\text{mod}}$ ) and temperature is stored in a table (Paragraph [0027 and 0030]).

**Regarding claim 3**, Ciancio discloses an adjusting laser performance based on the temperature, target average power, and modulation current ( $I_{\text{mod}}$ ) utilizes measurements of an optical power level produced by the specific laser device to further adjust laser performance (Paragraph [0030, Lines 7 – 12]).

**Regarding claim 4,** Ciancio discloses a relationship between target average power (Paragraph [0030, Lines 7 – 12]) and temperature (Paragraph [0027 and 0030]) for a specific laser device over a range of temperatures a base power level (It is disclose in Paragraph [0030, Lines 7 – 12] determined a base power level for laser using a data model).

Ciancio does not modified discloses the claimed invention except for a measurements of slope efficiency over the range of temperatures for the specific laser device. It would have been obvious to one of ordinary skill in the art at the time the invention was made to a relationship between target average power and temperature for a specific laser device includes using measurements of slope efficiency over the range of temperatures for the specific laser device since it was known in the art when the temperature is high and the device plug in is obvious obtain by mathematically the slope efficiency and make a mathematically graphic.

Claims 22 – 26, 28 – 29, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ames (5,073,838) in view of Ciancio (2002/0196595) further in view of in view of Levinson (5,019,769).

**Regarding claim 22,** Ames discloses an optical link comprising: a semiconductor laser (Fig. 2, Character 10); a monitor element (Fig. 2, Character 22) for

measuring the optical power produced by the semiconductor laser emitter (Fig. 2, Character 10); temperature sensor (Fig. 2, Character 16, and Column 3, Lines 60 – 67) for detecting the temperature of the semiconductor laser emitter and producing an sensor output signal associated with the detected temperature; memory including a look-up table (Fig. 2, Character 40, abstract, Column 8, Lines 11 – 21) for having stored values for current information associated with temperature; and laser driver circuitry (Fig. 2, Character 18) for receiving temperature dependent current information from the table and using said current information to provide a driving current to the semiconductor laser emitter so that the laser emits an optical signal having a desired optical power.

Ames as modified discloses the claimed invention except for fiber optic link. However, it is well know in the art to apply the fiber optic link as discloses by Levinson in Column 7 Lines 9 – 12. Therefore, it would have been obvious to a person having ordinary skill in the art to apply the well know fiber optic link as suggested by Levinson to the laser of Ames, because it will could be used of standard construction and the light transmitted by the optical fiber link is converted into a electrical signal, and transmitting information see Figure 1, Character 222 and Column 7, Lines 9 – 12 of Levinson.

Ames as modifies discloses the claimed invention except for target average power values. However, it is well know in the art to combine the calculating a target average power value as discloses by Ciancio, Paragraph [0030, Lines 7 – 12]. Therefore, it would have been obvious to a person having ordinary skill in the art at the

time the invention was to combine the well known in the art to calculating target average power value as suggested by Ciancio because the power level is determined a base power level for laser using a data model see Paragraph [0030, Lines 7 – 12] of Ciancio.

**Regarding claim 23,** Ames in view of Ciancio the memory includes a look-up table having stored values concerning a relationship between modulation current ( $I_{\text{mod}}$ ) and temperature is stored in a table (Paragraph [0027 and 0030]) that can be used to provide a desired temperature dependent regulation of modulation current.

**Regarding claims 24 – 26, 29 and 33** Ames discloses the temperature sensor (Fig. 2, Character 16) detects the temperature of the semiconductor laser emitter (Fig. 2, Character 10); and wherein the look-up table (Fig. 2, Character 40) provides the laser driver circuitry (Fig. 2, Character 18) with temperature dependent modulation current information that provides a driving current to the semiconductor laser emitter so that the laser emits an optical signal (Column 6, Lines 22 – 29); wherein the laser driver circuitry (Fig. 2, Character 18) receives the temperature dependent modulation current information (Fig. 2, Character 128) and therefrom determines a driving current which is provided to the semiconductor laser (Fig. 2, Character 10) emitter so that the laser emitter emits an optical signal (Fig. 2, Character 28).

Ames as modifies discloses the claimed invention except for target average power values. However, it is well know in the art to combine the calculating a target

average power value as discloses by Ciancio, Paragraph [0030, Lines 7 – 12]. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was to combine the well known in the art to calculating target average power value as suggested by Ciancio because the power level is determined a base power level for laser using a data model see Paragraph [0030, Lines 7 – 12] of Ciancio.

**Regarding claim 28 and 32,** Ames disclose a optical link comprising: a semiconductor laser (Fig. 2, Character 10); a monitor element (Fig. 2, Character 22) for measuring the optical power produced by the semiconductor laser emitter (Fig. 2, Character 10); temperature sensor (Fig. 2, Character 16, and Column 3, Lines 60 – 67) for detecting the temperature of the semiconductor laser emitter and producing an sensor output signal associated with the detected temperature; memory including a look-up table (Fig. 2, Character 40, abstract, Column 8, Lines 11 – 21) for having stored values for current information associated with temperature; and laser driver circuitry (Fig. 2, Character 18) for receiving temperature dependent current information from the table and using said current information to provide a driving current to the semiconductor laser emitter so that the laser emits an optical signal having a desired optical power.

Ames as modified discloses the claimed invention except for fiber optic link. However, it is well know in the art to apply the fiber optic link as discloses by Levinson



in Column 7 Lines 9 – 12. Therefore, it would have been obvious to a person having ordinary skill in the art to apply the well know fiber optic link as suggested by Levinson to the laser of Ames, because it will could be used of standard construction and the light transmitted by the optical fiber link is converted into a electrical signal, and transmitting information see Figure 1, Character 222 and Column 7, Lines 9 – 12 of Levinson.

Ames discloses the claimed invention except for the look-up table having stored values concerning relationship between temperature, modulation current and the current required for to produce a logical ( $I_1$ ). However, it is well know in the art to combine the look-up table having stored values concerning relationship between temperature, modulation current and the current required for to produce a logical ( $I_1$ ) as discloses by Ciancio in Abstract, Paragraphs [0008 – 0012, 0025, 0027 and 0030]). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was to combine the well known the look-up table having stored values concerning relationship between temperature, modulation current and the current required for to produce a logical ( $I_1$ ) as suggested by Ciancio to the laser of Ames, because in look- up table can stored temperature, modulation current and the current required for to produce a logical ( $I_1$ ) to compare each other see (Paragraphs [0027 and 0030] by Ciancio.

***Allowable Subject Matter***

Claims 5 – 19 and 34 are allowed.

The following is an examiner's statement of reasons for allowance: Claim 5 recites a method of establishing a trim and compensation scheme for a laser emitter in a fiber optic link where the laser emitter is selected from among a population of similar lasers structure including the specific structure limitation of *determining whether the base power level satisfies a set of pre-specified operating parameters; if a laser having the determined base power level does not satisfy the set of pre-specified operating parameters, the user specified performance parameters are adjusted and the operations of b) and c) are repeated to determine a new base power level; if a laser having the determined base power level does satisfy the set of pre-specified operating parameters*, which is neither anticipated or disclosed nor suggested in any piece of available prior art, which is neither anticipated nor obvious over the prior art of record.

The following is an examiner's statement of reasons for allowance: Claim 34 recites a laser emitter device suitable for coupling with an optical fiber in a fiber optic link structure including the specific structure limitation of *operational power circuitry for determining a suitable qualified optical power level at each temperature and generating an associated operational power output signal; and temperature compensation circuitry*

*that receives the monitor output signal and receives the operational power output signal and determines whether a modulation current provided to the laser is to be adjustable to accommodate changing temperature condition*, which is neither anticipated or disclosed nor suggested in any piece of available prior art, which is neither anticipated nor obvious over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Response to Arguments***

Applicant's arguments filed on 01/03/2007 have been fully considered but they are not persuasive because applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Flores Ruiz whose telephone number is (571) 272-1940. The examiner can normally be reached on M - F.


Art Unit: 2828

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Sun Harvey can be reached on (571) -272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Delma R. Flores Ruiz  
Examiner  
Art Unit 2828  
DRFR/MH



Min Sun Harvey  
Supervisor Patent Examiner  
Art Unit 2828  
January 14, 2007